BENEDIKT KLEPPMANN

CURRENT ADDRESS: HANS-THOMA-STRASSE 7, 69121 HEIDELBERG
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NATIONALITY: GERMAN

IT SKILLS

Languages: Python, R, Java, Matlab, Javascript, CUDA, C++, VBA

Knowledge Areas: Machine Learning, Statistics, Complex Systems, Computer Science, Simulation Science

PROFESSIONAL AND RESEARCH EXPERIENCE

12.2021 – now   **Springer-Verlag GmbH**
Data Engineer
- Developed and maintained large-scale data pipelines (Python, Apache Airflow, DBT, Cloud Functions, BigQuery, Google Cloud)
- Led the implementation of new technologies (e.g., Google Cloud, SN Cloud, dbt, Terraform, Looker, Okta, etc.) across the team
- Analyzed requirements and created data visualizations for business stakeholders

09.2018 – 11.2021   **Innovationszentrum Aalen**
Self-employed Researcher & Developer
- Designed and developed a novel data modeling approach (Fundamental Theory Building) based on Bayesian inference and complex system simulations
- Built the online platform www.treeofknowledge.ai to implement, test and evaluate the approach (Python, JavaScript, server administration)
- Collaborated with two sociology research teams to apply the framework to empirical problems and presented results in academic settings

04.2017 – 08.2018   **University of Mannheim**
Research Associate
- Developed algorithms for integrating large-scale datasets (Java, machine learning)
- Performed scientific evaluation and documentation of algorithmic performance and scalability.

03.2016 – 02.2017   **Msales GmbH, Karlsruhe**
Data Scientist
- Built supervised learning models and generated features for bot detection (Python, machine learning, probabilistic modelling)
- Evaluated classification rules and generated quality metrics for model assessment.

11.2013 – 01.2016   **Aon Centre for Innovation and Analytics (ACIA), Dublin, Ireland**
Data Scientist / ETL Developer / Operational Data Analyst
- Developed data matching methods (Python, NLP, Web Scraping)
- Operated and maintained ETL systems (Datastage, SQL); automated data quality validation

EDUCATION

2012 – 2013   **Dublin Institute of Technology, Dublin, Ireland**
Postgraduate Diploma in Advanced Software Development
- Master's Thesis: *Automatic Table Extension with Open Data* (Classification Models, Search Indexes, Imputation)

2008 – 2012   **University of Cergy-Pontoise (UCP), France**
Licence in Physics and Simulation (BSc)
- Graduated 3rd in class (of 23 students); Award for outstanding achievement
- Coursework in Statistical Physics, Numerical Simulation, and Computing for Physicists (Matlab, R, Fortran, Gnuplot)
- Bachelor's Thesis: *Computer Simulation and Visualization of Nonlinear Systems/Models* (Matlab, Gnuplot)

2005 – 2008   **Technical High School, Aalen, Germany – IT Program**
- Final grade: 1.7 (Award)

PUBLICATIONS

- Kleppmann, B., Bizer, C., Yaqub, E., Temme, F., Schlunder, P., Arnu, D., & Klinkenberg, R. (2018). *Density- and Correlation-based Table Extension*. In LWDA (pp. 191–194).
- Herget, F., Kleppmann, B., Ahrweiler, P., Gruca, J., & Neumann, M. (2022). *How Perceived Complexity Impacts on Comfort Zones in Social Decision Contexts*—Combining Gamification and Simulation for Assessment. In Advances in Social Simulation (pp. 203–215). Springer International Publishing.
- Kleppmann, B. T. (2021). *Tree of Knowledge: an Online Platform for Learning the Behaviour of Complex Systems*. arXiv preprint arXiv:2103.03666 (preprint).

INDEPENDENT LEARNING

2012-2025
- Took Coursera courses on Statistics, Machine Learning. and Game Theory
- Further training in Python, Agile, ITIL
- Used textbooks and online resources to learn most areas of Machine Learning (NLP, reinforcement learning, deep learning, etc.), classical AI (knowledge representations, statistical-relational learning, description logics, etc.), Statistical Modelling, Bayesian Inference methods and techniques for large-scale simulations

ACTIVITIES AND INTERESTS

Languages   German and English (grew up bilingually), French (fluent).

Sports   Cycling, climbing, hiking and juggling.

Travel   Volunteered in a children's home in India. Travelled extensively throughout Europe. Worked for 5 weeks on an organic farm in France.

Music   Play the piano socially. Played bass guitar in a band for 3 years.